

WHAT IS CLAIMED IS:

1. A method for providing optical alignment for a visible wavelength reflective system, comprising:

5 positioning a first mirror blank on a lathe fixture, the first mirror blank comprising a single precision pinhole;

securing the first mirror blank to the lathe fixture; and

10 generating a first mirror from the first mirror blank.

2. The method of Claim 1, the first mirror comprising a tolerance stack-up associated with the lathe fixture of less than 6.0 microns in a single direction.

15 3. The method of Claim 1, the first mirror comprising a tolerance stack-up associated with the lathe fixture of approximately 0.5 microns in a single direction.

20 4. The method of Claim 1, further comprising:

positioning a second mirror blank on the lathe fixture, the second mirror blank comprising a single precision pinhole;

25 securing the second mirror blank to the lathe fixture; and

generating a second mirror from the second mirror blank.

5. The method of Claim 4, further comprising:  
positioning the first mirror on an assembly  
housing, the first mirror comprising a single precision  
pinhole;

5               securing the first mirror to the assembly  
housing;

                  positioning the second mirror on the assembly  
housing, the second mirror comprising a single precision  
pinhole; and

10               securing the second mirror to the assembly  
housing.

6. The method of Claim 5, the first mirror  
comprising a tolerance stack-up associated with the  
15 assembly housing of less than 6.5 microns in a single  
direction, and the second mirror comprising a tolerance  
stack-up associated with the assembly housing of less  
than 6.0 microns in a single direction.

20               7. The method of Claim 5, the first mirror  
comprising a tolerance stack-up associated with the  
assembly housing of approximately 2.0 microns in a single  
direction, and the second mirror comprising a tolerance  
stack-up associated with the assembly housing of  
25 approximately 2.0 microns in a single direction.

8. A method for providing optical alignment for a visible wavelength reflective system, comprising:

positioning a first mirror on an assembly housing, the first mirror comprising a single precision  
5 pinhole;

securing the first mirror to the assembly housing;

positioning a second mirror on the assembly housing, the second mirror comprising a single precision  
10 pinhole; and

securing the second mirror to the assembly housing.

9. The method of Claim 8, the first mirror  
15 comprising a tolerance stack-up associated with the assembly housing of less than 6.5 microns in a single direction, and the second mirror comprising a tolerance stack-up associated with the assembly housing of less than 6.0 microns in a single direction.

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10. The method of Claim 8, the first mirror comprising a tolerance stack-up associated with the assembly housing of approximately 2.0 microns in a single direction, and the second mirror comprising a tolerance  
25 stack-up associated with the assembly housing of approximately 2.0 microns in a single direction.

11. A system for providing optical alignment for a visible wavelength reflective system, comprising:

5 a lathe fixture operable to be received in a lathe, the lathe fixture comprising a single precision pin, the single precision pin aligned with an optical axis for the lathe when the lathe fixture is received in the lathe; and

10 a mirror blank operable to be secured to the lathe fixture, the mirror blank comprising a single precision pinhole, the single precision pinhole aligned with the single precision pin.

12. The system of Claim 11, the mirror blank comprising bolt holes, the mirror blank operable to be  
15 secured to the lathe fixture through the bolt holes.

13. The system of Claim 11, the lathe operable to generate a mirror from the mirror blank, the mirror comprising a single precision pinhole.  
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14. The system of Claim 13, the mirror comprising a tolerance stack-up associated with the lathe fixture of less than 6.5 microns in a single direction.

25 15. The system of Claim 13, the mirror comprising a tolerance stack-up associated with the lathe fixture of less than 6.0 microns in a single direction.

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17. An assembly housing for a visible wavelength reflective system, comprising:

a primary mirror comprising a single precision pinhole, the single precision pinhole aligned with an optical axis of the assembly housing; and

a secondary mirror comprising a single precision pinhole, the single precision pinhole aligned with the optical axis of the assembly housing.

18. The assembly housing of Claim 17, the primary mirror comprising a tolerance stack-up associated with the assembly housing of less than 6.5 microns in a single direction, and the secondary mirror comprising a tolerance stack-up associated with the assembly housing of less than 6.0 microns in a single direction.

19. The assembly housing of Claim 17, the primary mirror comprising a tolerance stack-up associated with the assembly housing of approximately 2.0 microns in a single direction, and the secondary mirror comprising a tolerance stack-up associated with the assembly housing of approximately 2.0 microns in a single direction.

20. The assembly housing of Claim 17, the primary and secondary mirrors each comprising bolt holes, the primary and secondary mirrors operable to be secured to the assembly housing through the bolt holes.